Application No. 09/428,679

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**In the Claims:**

Please amend the following claims as shown below:

6. (Twice Amended) A method for utilizing a network of computers to render a three dimensional scene, comprising:

sending a plurality of requests from a first computer to a plurality of other computers over a high speed network, the plurality of other computers each storing high resolution three dimensional scene objects, wherein the requests identify selected three dimensional objects stored at the plurality of other computers ;

operating the plurality of other computers in parallel to create respective LOD mesh representations of the selected three dimensional objects stored at the other computers; and

communicating the respective LOD mesh representations of the selected three dimensional objects from the plurality of other computers in parallel over the network to the first computer, and processing the received LOD mesh representations in a graphics rendering pipeline in the first computer to create a display image of a three dimensional scene.

12. (Twice Amended) A computer system for rendering a three dimensional scene, comprising:

a visualization console including a graphics processor and a display;

a plurality of workstations, connected to the visualization console by a high speed network to enable the visualization console and the plurality of workstations to operate together;

each of the plurality of workstations storing three dimensional objects, the stored three dimensional objects collectively representing a three dimensional scene; and

the visualization console storing identifiers of each of the three dimensional objects stored at the plurality of workstations;

wherein the visualization console is operable under user control to communicate requests to the plurality of workstations over the high speed network, said requests including identifiers of selected ones of the three dimensional objects stored at the workstations representing a selected view of the three dimensional scene;

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the workstations are responsive to received requests to operate in parallel to create LOD representations of the respective stored three dimensional objects identified by the requests received from the visualization console and to communicate the LOD representations of the selected three dimensional objects in parallel to the visualization console for rendering by the visualization console graphics processor to create a composite image display representation by the visualization console display of the selected view of the three dimensional scene.

17. (Twice Amended) A computer system for rendering a three dimensional scene, comprising:

a visualization console including a graphics processor and a display;

a plurality of workstations, connected to the visualization console by a high speed network;

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means for sending requests from the visualization console to the plurality of workstations over the high speed network, wherein the requests identify three dimensional objects stored at the plurality of workstations;

the workstations including means operable in parallel for creating a LOD representation of each three dimensional object stored at a respective workstation and that is identified by a request received from the visualization console; and

said workstations also including means for effecting parallel communication of the LOD representations of the three dimensional objects to the visualization console, and

the visualization console including graphics processing means for assembling the received LOD representations of the three dimensional objects into a three dimensional scene image display by said visualization console display.

23. (Amended) A method of displaying a three dimensional scene image, comprising:

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from a first computer coupled to a display, transmitting a retrieval request to each of a plurality of second computers storing three dimensional scene objects distributively stored at said second computers together with associated identifiers, said stored three dimensional scene objects collectively representing a three dimensional scene, said retrieval request including identifiers associated with stored scene objects representing at least a portion of the three dimensional scene selected for display;

the second computers retrieving and processing in parallel three dimensional scene objects stored at individual ones of the second computers based on matches between three dimensional scene object identifiers in the received request and three dimensional scene objects stored at the second computers, the processing by the second computers creating respective meshes of the retrieved three dimensional scene objects at a selected level of detail;

the second computers communicating the processed three dimensional scene object meshes in parallel to a graphics rendering pipeline processor in the first computer to render and create a display a representation of the selected portion of the three dimensional scene assembled from the three dimensional scene object meshes communicated by the plurality of second computers to the first computer.

28. (Amended) A method of displaying a three dimensional scene image, comprising:

from a first computer coupled to a display, transmitting a retrieval request to each of a plurality of second computers storing three dimensional scene objects distributively stored at said second computers, said retrieval request including parameters describing a selected part of the three dimensional scene to be displayed;

the second computers responding to the retrieval request by selectively retrieving and processing in parallel according to said parameters, three dimensional scene objects stored by the second computers, the processing by the second computers creating respective meshes of the retrieved three dimensional scene objects at a selected level of detail; and

the second computers communicating the processed three dimensional scene object meshes in parallel to a graphics rendering pipeline in the first computer to create on said display a representation of the selected part of the three dimensional scene assembled from the three dimensional scene object meshes communicated by the plurality of second computers to the first computer.

31. (Amended) A method of displaying a three dimensional scene image, comprising:

initially, from a first computer coupled to a display, transmitting to and distributively storing at a plurality of second computers a plurality of three dimensional scene objects together with associated identifiers, said three dimensional scene objects stored at the second

computers collectively representing a three dimensional scene, and storing at the first computer, identifiers for the respective three dimensional scene objects stored at the plurality of second computers;

subsequently, transmitting retrieval request from the first computer to the plurality of second computers, said retrieval requests including identifiers associated with selected ones of the three dimensional scene objects distributively stored at said second computers representing a portion of the three dimensional scene selected for display;

the second computers retrieving and processing in parallel three dimensional scene objects stored at individual ones of the second computers based on each match between a three dimensional scene object identifier in the received request and a three dimensional scene object identifier stored at that second computer, the processing by the second computers creating respective meshes of the retrieved three dimensional scene objects at a selected level of detail;

the second computers communicating in parallel the processed three dimensional scene object meshes to a graphics rendering processor of the first computer to create on said display a representation of the selected portion of the three dimensional scene assembled from the three dimensional scene object meshes communicated by the plurality of second computers to the first computer.

32. (Amended) A computer system for rendering a three dimensional scene, comprising:

a first computer including a display;

a plurality of workstations operably coupled to the first computer by communication network;

each workstation storing three dimensional scene objects, the three dimensional scene objects stored by the workstations collectively representing a high resolution three dimensional scene;

the first computer storing an object identifier for each three dimensional scene object stored at the plurality of workstations; the first computer operable to send over said communication links a retrieval request to the plurality of workstations including object identifiers and locations associated with a selected plurality of said stored three dimensional scene objects representing a selected portion of said three dimensional scene;

the workstations operable in parallel to retrieve and process three dimensional scene objects stored at individual ones of the workstations corresponding to object identifiers in the received request to create respective meshes of the retrieved three dimensional scene objects at a selected lower resolution and to communicate the processed three dimensional scene object meshes in parallel over the communication network to the first computer; and wherein

the first computer includes a graphics processor operable to render the received three dimensional scene object meshes and to create on said display a representation of said selected portion of the three dimensional scene.

33. (Amended) A computer system for rendering a three dimensional scene, comprising:

a first computer including a graphics rendering pipeline and a display;

a plurality of workstations operably coupled to the first computer by communication network;

a database of three dimensional scene objects collectively representing a three dimensional scene, said database accessible by the workstations;

each workstation storing references to said database entries;

the first computer operable to send over said communication links a retrieval request to the plurality of workstations identifying a selected plurality of said stored three dimensional scene objects representing a selected view of said three dimensional scene;

the workstations operable in parallel to retrieve and process three dimensional scene objects based on the retrieval request to create respective meshes of the retrieved three dimensional scene objects at a selected level of detail and to effect parallel communication of the processed three dimensional scene object meshes over the communication network to the graphics rendering pipeline of the first computer; and wherein

the first computer is operable to create on said display a representation of the selected view of the three dimensional scene from the received three dimensional scene object meshes.